

The evolutionary position of the snow geese as suggested by certain goose hybrids and variants

by James Harrison and Jeffery Harrison

Received 20th October, 1968

The tendency for certain hybrids among the Anatidae to show a close resemblance to species other than those involved in their parentage is now well known. In a recent note on a Wigeon *Anas penelope* x Chiloe Wigeon *Anas sibilatrix*, which strongly resembled the American Wigeon *Anas americana*, we listed a number of examples of this phenomenon (Harrison and Harrison, 1968). This included one example of an intergeneric goose hybrid, in which a Grey Lag Goose *Anser anser* x Atlantic Canada Goose *Branta c. canadensis* resembled the blue phase of the Lesser Snow Goose *Anser c. caerulescens* (Harrison and Harrison, 1966).

These hybrids provide evidence of phylogenetic relationships. This has been conclusively demonstrated in hybrids involving Delacour's (1956) group of "Blue-winged Ducks", an evolutionary line of *Anas* including the Garganey *A. querquedula*, Blue-winged Teal *A. discors*, Cinnamon Teal *A. cyanoptera*, Argentinian Red Shoveler *A. platalea*, Cape Shoveler *A. smithi*, Australasian Shoveler *A. rhynchotis* and Northern Shoveler *A. clypeata*. This group shows an increasingly specialised bill as the line develops from the least specialised Garganey to the most specialised Northern Shoveler.

Hybrids involving Cinnamon Teal and Northern Shoveler give rise to progeny which are almost indistinguishable from the New Zealand Shoveler *A. r. variegata*, a species which lies in between these two in the evolutionary tree (Harrison and Harrison 1965 and in press). Other examples were quoted by Gillham, Harrison and Harrison (1966) involving hybrids of the genus *Aythya*.

Bearing these facts in mind, the occurrence of two intergeneric goose hybrids showing a basic "blue snow goose pattern", take on an increasing significance. The first of these, the Grey Lag Goose♂ x Canada Goose♀ has already been described in detail. It was a female which basically had a white head and neck with an increasing amount of dark striations extending down the neck. The remainder of the plumage was intermediate between the two parent species.

The second intergeneric hybrid is between a Barnacle Goose, *Branta leucopsis*♂ x White-fronted Goose *Anser a. albifrons*♀ bred by Alastair McLean, who kindly presented it to us. This hybrid also shows a strong tendency towards a "blue snow goose pattern" in that it has a white forehead, cheeks and throat, the remainder of the crown and neck being strongly flecked with white. Like the previous hybrid, the remainder of the body plumage is intermediate between the two parent species. While it is possible to recognise the Barnacle influence in the white forehead and cheeks the white striations on the remainder of the head are clearly derived from neither parent.

There is another *Branta* species which produces a variant pattern on the head and neck remarkably similar to this latter hybrid. This is the giant Canada Goose *B. canadensis maxima*, a race which has been described in detail by Hanson (1965). Examples are illustrated in plates 22 and 23 of Hanson's monograph showing this. Very rarely the other large races of the Canada Goose also show this variation.

A number of examples of variants have been described in the Anatidae

which are considered to result from recessive genes and to indicate phylogenetic relationships (Harrison and Harrison 1963). This includes such examples as white neck rings in the Teal *Anas c. crecca* and Gadwall *Anas strepera*.



Anser anser x *Branta canadensis*



Branta leucopsis x *Anser a. albifrons*

Photos: Pamela Harrison

